



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,103	10/05/2000	Douglas U. Mennie	47171-00271	3137

41230 7590 04/29/2005

CUMMINS-ALLISON CORP.  
C/O JENKENS & GILCHRIST  
225 WEST WASHINGTON STREET, SUITE 2600  
CHICAGO, IL 60606

EXAMINER

SHAPIRO, JEFFERY A

ART UNIT	PAPER NUMBER
----------	--------------

3653

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/684,103

Applicant(s)

MENNIE ET AL.

Examiner

Jeffrey A. Shapiro

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-29, 78-89 and 146-149 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-29, 78-89 and 146-149 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-29, 78-89, and 146-149 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatanaka et al (Japanese Patent Publication No. 61-14557) in view of Fujii et al (UK Patent Application, GB 2088832A), and further in view of Winkler (US 5,394,992) and McInerny (US 5,761,089). Hatanaka discloses Applicants' claimed system as follows.

As described in Claims 1-30;

- a. receiving a stack of bills in an input receptacle (2) of the evaluation device (1) (see also p.4, lines 9-14);
- b. transporting the bills, one at a time, from the input receptacle to one of two or more output receptacles of the currency evaluation device (see p.4, lines 9-14 and p.7, lines 19-22);
- c. counting and determining the denomination of the bills utilizing a detector (111) positioned along a transport path between the input receptacle and the output receptacles (see p. 7, lines 8-16);

d. determining whether the bills meet or fail to meet a non-piece count related criterion; (Note again, p.7, lines 9-12, which states that the detection unit (111) detects patterns optically. Note also p. 8, lines 1-10, which states that a "mistaken note of paper currency" is flagged as an error when a no-denomination signal is output. No denomination is construed as a non-piece count criterion, since it is not related to the counting of the bills, but with how the bills look based on pattern recognized on the surface of the bill. Note also that the specification of Hatanaka describes what is construed as a piece count criterion, being detected by counting roller (43). See p.6, lines 17-22. Note also Fujii et al (UK Patent Application, GB 2088832A), which mentions several non-piece count criterion, such as abnormal bank note length, abnormal photopattern, on p.1, lines 105-121 of the specification.)

e. halting the transporting when a bill meets or fails to meet the criterion, a bill meeting or failing to meet the criterion being termed a flagged bill (see Hatanaka, p.7, lines 19-26, p.8, lines 1-10, p.11, lines 13-16, p.13, lines 22-26 and p. 14, lines 1 and 2, noting that if the bill does not have a surface pattern that matches the stored pattern, the transporting is halted, thus keeping the bill in the conveying path at a particular location);

f. wherein the halting is performed such that the flagged bill is positioned as the last bill in one of the output receptacles; (See, for

example, p.11, lines 13-16, noting that if a mismatch between the stored pattern and the actual detected pattern on the bill, that the conveyor unit is halted, with the erroneous/flagged note being ejected through "a discharge slot", as described on p. 7, lines 23-25, construed as meaning another separate discharge than discharge slot (22). The erroneous bill is discharged as the last bill transported before the device is shut down.

Note also that it would have been obvious for one ordinarily skilled in the art to direct such a bill to any discharge, for example, the discharge where counted bills had been collected, thus making the erroneous bill the last bill on the pile of bills, the counted bills being below the erroneous bill.)

g. wherein bills whose denomination are determined are delivered to a first set of one or more of the output receptacles and wherein bills whose denomination are not determined are directed to a second set of one or more of the output receptacles, a bill whose denomination is not determined being termed a no call bill, the output receptacles of the second set being different from the output receptacles of the first set (again, note discussion in "f", above);

h. determining whether a bill is a stranger bill (again, see above discussion in "a-f");

i. determining whether a bill is a suspect bill; (See p.11, lines 8-16, noting that detection of a "wrong denomination" bill appears to meet Applicants' definition of a suspect bill in Applicants' specification at p.30,

lines 18-24, also noting that it would be obvious to use any of the extracted features of the actual pattern of the bill in the system of Hatanaka to determine the genuineness of the bill. Note also that a set can be construed as consisting of one output receptacle.)

j. wherein bills whose denomination are determined are delivered to a first set of one or more of the output receptacles, the output receptacles of the first set being different from the output receptacles of the second set (again, see prior discussions in "a-f" above);

k. determining whether a bill is a no call bill (again, see prior discussions in "a-f", above);

(Note that it would have been obvious to provide a transportation rate of 800 bills per minute. See, for example, Winkler (US 5,394,992), col. 5, lines 53-54, having a speed of 2000 documents per minute and McInerny (US 5,761,089), col. 17, lines 50-53, having a speed of either 1200 or 600 documents per minute. Based on this evidence, it would have been obvious to one of ordinary skill in the art to create a bill counting machine with a document speed of 800 bills per minute, as the particular situation would require, or simply to make the machine count bills at a faster, more economical rate.)

l. a third output receptacle; (Note that it would have been obvious to provide as many outputs as one would require to handle the volume of bills expected to be counted, as one ordinarily skilled in the art would

consider that overflow amounts of counted bills might require handling by the machine. Note also, the above discussion in "f" above, for example, where a separate discharge slot is mentioned for directing an erroneous bill into another, second discharge slot.)

m. generating a characteristic information output signal in response to detected characteristic information via the detector (see above discussion, in "a-f);

n. producing tracking signals in response to the physical movement of bills; (See p.7, lines 16-19 and p.8, lines 1-15, noting that detection unit (122) detects bills located in loading unit (2) and detection unit (129) detects bills conveyed over the paper currency collection unit (23). These detectors send signals to the main control unit (121), which in effect, tell the control unit where the bills are.)

o. determining the face orientation of the bills; (Note that it would have been obvious to one ordinarily skilled in the art to use the orientation of the bills as a criterion, as the actual detected surface pattern of the bill is stored in the system controller and compared to the reference pattern. If the pattern is not correct in any way, it is obvious for one ordinarily skilled in pattern recognition to determine that that particular feature is not a match, therefore the bill is classed as erroneous or a "no-call" bill. A bill fed into the machine with the wrong length would be expected to have a different pattern detected than one fed into the machine with the lengths

consistent with the reference pattern. See also the Fujii patent '832, cited above.)

- p. the second set of output receptacles includes a receptacle designated as a no call output receptacle (again, note that the "another discharge slot" may be construed as an output that receives no call bills);
- q. the halting occurs after a no call bill has been delivered to the no call output receptacle (again, see discussion in "a-f" above);
- r. the halting occurs with the no call bill being positioned at an identifiable location in the no call output receptacle (again, see "a-f" and "n" above, noting that the contents of the output receptacle in Hatanaka is sensed or tracked);
- s. the halting occurs with the no call bill being the last bill transported to the no call output receptacle, wherein the criteria is the denomination of a bill and wherein a bill failing to meet the criterion of having its denomination determined is a flagged bill (see "a-f" discussion above);
- t. the halting occurs before a no call bill has been delivered to the no call output receptacle (see "a-f", discussed above);
- u. the halting occurs with the no call bill being located at an identifiable location within the transport path (note, as described previously, that the erroneous/no call bill, when halted, is located at an identifiable location in the conveying path, after which, the conveyor control directs the located erroneous bill to the discharge slot);



v. the halting occurs after the no call bill has been delivered to an output receptacle of the second set; (Note that it would have been obvious to halt the machine completely after the erroneous/no call bill is output to the second discharge slot. Note also that the cited passages of Hatanaka describe the machine halting after the no call bill is finally transported.)

w. the halting occurs with the no call bill being positioned at an identifiable location in an output receptacle of the second set (again, note that the system of Hatanaka detects the contents of the discharge slots and associated receptacles);

x. the halting does not occur after a no call bill or a stranger bill has been delivered to an output receptacle of the second set (note that it would have been obvious to continue the operation of the machine of Hatanaka, to count bills after the erroneous/no call bill is discharged, the other bills being placed either in the original discharge slot and receptacle or in a third discharge slot or receptacle);

y. the counting and determining of the currency bills is performed independent of the size of the bills (see "a-f" above, noting that it would have been obvious to use portions of the bill pattern besides size to count and determine the currency genuiness of the bills, since size is only one of many features which can be obtained from the optical scan of the bill surface);

z. an optical scanning head/detector (111, 112) which scans a preselected segment of a bill, generates a scanned pattern from each of the bills, determines the denomination of the bill by comparing a scanned pattern with a master pattern (see Hatanaka, p.6, lines 8-16, p.8, lines 17-19, p.9, lines 12-14, p.11, lines 8-16, 21-23, p.12, lines 13-18);

Hatanaka does not expressly disclose, but Winkler discloses running a bank note sorting device at various speeds. See Winkler, col. 1, lines 31, 32, col. 5, lines 53-68 and col. 6, lines 1-25, in which it is stated that speeds of up to 2000 documents per minute are achieved.

Hatanaka does not expressly disclose, but Fujii discloses identifying a non-piece count criterion, such as abnormal photopattern. See p.6, lines 17-22 of Hatanaka and p.1, lines 105-121 of Fujii. Fujii also discloses using a magnetic sensor to check a magnetic pattern of a bank note to "check the type of banknote and the correctness of the bank note." See Fujii, p.1, lines 6-20.

Hatanaka does not expressly disclose, but McInerny discloses the details of a magnetic read head (86) which determines the location of a security thread on said bill.

Hatanaka, Fujii, Winkler and McInerny are all considered to be analogous art because they all concern paper currency counting and sorting.

At the time of the invention, it would have been obvious for one ordinarily skilled in the art to have used the device of Hatanaka to identify a non-piece count criterion, such as abnormal photopattern, as described in Fujii. See p.6, lines 17-22 of Hatanaka and p.1, lines 105-121 of the specification of Fujii.

The suggestion/motivation would have been to accept only correct bank notes and reject incorrect banknotes. See Fujii, specification, p.1, lines 6-8.

It also would have been obvious to use the magnetic read head of McInerny in the device of Hatanaka.

The suggestion/motivation would have been that Hatanaka discloses discriminating bank notes and McInerny discloses discriminating bank notes by use of a magnetic detector to detect magnetic items embedded in bank notes. Hatanaka therefore suggests discriminating banknotes, which McInerny solves by detecting magnetic portions of banknotes. McInerny also suggests that these magnetic areas are strips, functional equivalents thereof, in which case it would have been obvious to one ordinarily skilled in the art to have used McInerny's magnetic detector to detect said strips. Further, McInerny suggests determining the location of said magnetic areas on the bill, since McInerny discloses determining the location of ink-bearing areas. It would therefore have been obvious to use McInerny's teaching of determining the location of magnetic areas to determine the location of a magnetic strip on a bill.

Regarding Winkler and McInerny, one ordinarily skilled in the art would recognize that based on the teachings of these prior art examples, cited above, it would have been obvious to cause a device such as that of Hatanaka to operate at a wide variety of bill output speeds, based upon the output requirements desired.

Finally, note that it would have been obvious to extend the magnetic sensor of McInerny so as to detect magnetic areas along the entire width of the bill, as one ordinarily skilled in the art would have recognized.

Therefore, it would have been obvious to combine Hatanaka, Fujii, Winkler and McInerny in order to obtain the invention as described in Claims 7-29, 78-89, and 146-149.

### ***Response to Arguments***

3. Applicant's arguments filed 2/11/05 have been fully considered but they are not persuasive. Applicant asserts that there is no motivation or suggestion to combine the prior art cited above. See discussion above. Note also that Hatanaka discloses use of an optical scanning head. It would have been considered obvious to add a similar head, but that detects magnetic strips embedded in bank notes, as is common in the art, to the system of Hatanaka, since magnetic threads are used extensively in banknotes and McInerny teaches detecting such magnetic areas of a banknote. Note also that the use of an optical scanning head extending across the width of a banknote would suggest the same using a magnetic scanhead, where it is anticipated that magnetic areas equaling the width of the bill are to be detected. Standard magnetic strips used, for example, in US banknotes, are an example of standard security features

which are magnetic in nature that would cause one ordinarily skilled to use a width-sized magnetic scanning head. Such a scanning head could be considered to be made up of a single head or several smaller heads, placed together widthwise. Therefore, it would have been obvious to use Hatanaka and McInerny to obtain Applicant's claimed system using magnetic scanning heads.

4: Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey A. Shapiro whose telephone number is (571)272-6943. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald P. Walsh can be reached on (571)272-6944. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Application/Control Number: 09/684,103  
Art Unit: 3653

Page 13

A handwritten signature in black ink, appearing to read 'J. Shapiro', with a stylized, sweeping flourish extending to the right.

Jeffrey A. Shapiro  
Examiner  
Art Unit 3653

April 26, 2005

A handwritten signature in black ink, appearing to read 'Donald P. Walsh', with a stylized, sweeping flourish extending to the right.

DONALD P. WALSH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600